

## **REMARKS**

Claims 1-6 and 8-12 are now pending in the application. Claims 1 and 12 have been amended. Support for the foregoing amendments can be found throughout the specification, drawings, and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

## **INTERVIEW SUMMARY**

Applicant would like to thank the Examiner for courtesies extended during the telephonic interview on December 22, 2008. During the interview, the undersigned discussed with the Examiner that the Ciscon reference fails to address several aspects of the claims, including various multicasting aspects of the claims. The undersigned emphasized that the Examiner has not articulated how Ciscon teaches or suggest several of the claim limitations related to multicasting and requested clarification. No formal agreement was reached during the interview.

## **REJECTION UNDER 35 U.S.C. § 103**

Claims 1-6 and 8-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ciscon et al. (U.S. Pub. No. 2002/0004827) in view of Srivastava (U.S. Pat. No. 6,684,331). This rejection is respectfully traversed.

When determining whether a claim is obvious, the Examiner must make “a searching comparison of the claimed invention including all its limitations with the

teaching of the prior art.” In re Ochiai, 71 F.3d1565,1572 (Fed. Cir. 1995) (emphasis added).

Independent claim 1 has been rejected under 35 U.S.C. § 103(a) as unpatentable over an asserted combination of Ciscon and Srivastava. Applicant submits that the claimed features of “multicasting characteristics”, “multicasting group”, “user layer control block”, and “interface layer”, etc have not been specifically addressed by the Examiner. They are discussed detailed as follow:

First , The Examiner asserts that the feature “management at an interface layer for controlling multicasting characteristics corresponding to interfaces” in claim 1 is disclosed by Ciscon (abstract, par 0014); the feature “management at data link layer for controlling multicasting characteristics corresponding to data links, management at user layer for controlling multicasting characteristics corresponding to particular users” in claim 1 is disclosed by Ciscon (abstract, figure 1).

Applicant submits that the Examiner has ignored the limitations of “multicasting characteristics”, “interface layer” and “user layer” in claim 1 in the Office action. Applicant can find no mention of multicasting characteristics, interface layer and user layer in the whole specification of Ciscon.

In addition, Ciscon fails to disclose the limitation of “management at an interface layer for controlling multicasting characteristics corresponding to interfaces” and “management at data link layer for controlling multicasting characteristics corresponding to data links, management at user layer for controlling multicasting characteristics corresponding to particular users” in claim 1. Ciscon at best appears to show that a network monitor monitors and determines that a QoS event has occurred in the multi-

layered network based on the OSI model and a network controller responds to the QoS event in the multi-layered network. Therefore, Ciscon at best relates to QoS event monitor and controller, i.e., QoS controlling which secures the reliability of data communication of the network. In contrast, claim 1 is directed to management at an interface level, data link layer and user layer for controlling multicasting characteristics corresponding to interfaces, data links and particular users respectively. Therefore the management at interface layer, data link layer, and user layer relates to management of multicasting characteristics corresponding to multicasting interfaces, data links and particular users respectively. In other words, the management in Ciscon differs from claim 1 substantially. Ciscon therefore fails to disclose the limitation of management at an interface layer for controlling multicasting characteristics corresponding to interfaces.

Second, the Examiner asserts that the feature “at each layer, setting control blocks that respectively comprise of multicasting characteristic data corresponding to said each layer” in claim 1 is disclosed by Ciscon (abstract, par 0003, par 0013 and par 0014).

The Examiner has ignored the limitations of “control blocks” comprising “multicasting characteristic data corresponding to each layer” in claim 1 in the Office action. Applicant can find no mention of “setting control blocks” comprising “multicasting characteristic data corresponding to each layer” in the whole specification of Ciscon.

In addition, Ciscon fails to disclose the limitation of “at each layer, setting control blocks that respectively comprise of multicasting characteristic data corresponding to each layer”. Ciscon at best appears to show a multi-layered communication system that

is implemented with a broadband communications platform that enables quality of application service delivery and user control over the priority of information delivery flow. In the communication system of Ciscon, neither the network monitor nor the network controller for QoS controlling has multicasting characteristic data. Ciscon further at best appears to show that only a network monitor and a network controller are adapted for monitoring and controlling QoS of all the OSI reference model layers. In contrast, in claim 1, each of the interface layer, data link layer and user layer has a control block which has multicasting characteristic data corresponding to each layer. Ciscon therefore fails to disclose the limitation of setting control blocks that respectively comprise of multicasting characteristic data corresponding to each layer.

Third, the Examiner asserts that the feature “establishing a data relationship among the three layers of control blocks” is disclosed by Ciscon (par 0073 and Figure 4).

The Examiner has ignored the limitation of “control blocks” in claim 1 in the Office action. Applicant can find no mention of “the three layers of control blocks” in the whole specification of Ciscon.

In addition, Ciscon fails to disclose the limitation of “establishing a data relationship among the three layers of control blocks.” Cisco at best appears to show how the network controller responds the QoS event in a network element. Specifically, a resource database, inter-working with the network controller and the network monitor, organizes communication resources of the network element according to where the communication resources fit in the OSI reference model, and additionally, the resource database maintains the relationship between the various layers in the OSI model for the

communication resources. Ciscon only appears to show that the net controller 304 responses to the QoS event occurring at layer N by changing the network providing at a layer less than N, which has nothing to do with a data relationship. The resource database shown by Ciscon stores the communication resources, e.g. communication links. In claim 1, however, control blocks stores the multicasting characteristic data. The communication resources in Ciscon differ from the multicasting characteristic data in claim 1 substantially. Ciscon therefore fails to disclose the limitation of establishing a data relationship among the three layers of control blocks.

Fourth, the Examiner asserts that the feature of “managing a user of the multicasting group using the data relationship among the three layers of control blocks” is disclosed by Ciscon (abstract, Figure 3 and Figure 4).

Applicant submits that Ciscon fails to disclose the limitation of “managing a user of the multicasting group using the data relationship among the three layers of control blocks” in claim1. The Figure 3 of Ciscon shows connections among the network monitors, the network controllers, the resource database and the network element. The Figure 4 shows a flow of a method for providing broadband communication over a multi-layered network. Ciscon at best shows controlling QoS by using communication resources. In contrast, the data relationships among the control blocks in claim 1 are relationships among the multicasting characteristic data of the three layers, which is used for controlling users of multicast groups, such as users’ joint or leaving. Ciscon therefore fails to teach controlling users of multicasting groups by using the relationship of multicasting characteristic data among three layers, e.g. the limitation of “managing a

user of the multicasting group using the data relationship among the three layers of control blocks" in claim1.

Fifth, the Examiner asserts that although Ciscon does not disclose the management system including the multicasting proxy, in the same field of endeavor, Srivastava discloses multicasting proxy (abstract, col 5, lines 1-10, multicast proxy service node).

Applicant submits that Srivastava fails to disclose any features of multicasting management in the multicast proxy at least for the following reasons: Srivastava appears to relate to a method for establishing secure communication among multiple multicast proxy service nodes of domains, which are organized in a logical tree, and each domain stores a logical tree that organized the multicast proxy service nodes. Each domain also comprises a group manager at the root node of the binary tree, a multicast key distribution center, multicast service agent and directory service agent and key distribution center. The local key distribution center and multicast service agent obtains the identity of the publisher and based on the ID value, a secure channel is established with the DSA of the group member's domain. Srivastava therefore mentions a multicast proxy service node which only stores a group session key and a private key.

Claim 1, in contrast, relates to multicasting management performed in a multicasting proxy entity such as access server and edge service router, and the multicasting management is divided into three layers: interface layer, data link layer and user layer. Although Srivastava mentions a multicast proxy service node, the multicast proxy service node only stores a group session key and a private key. Srivastava fails

to disclose configuring three layers of multicasting management in the multicast proxy service node. Srivastava therefore fails to disclose any features of multicasting management in the multicast proxy.

Sixth, The Examiner asserts that the feature of “managing the user’s joining or leaving the multicasting group” is disclosed by Srivastava (col 7, lines 4-37).

Srivastava at best appears to show that the session keys are generated based on a public key scheme and the commonality between the physical topology of domains and the structure of a binary tree is used for generate a network of group controllers which manages membership within a secure multicast or broadcast group. Although Srivastava mentions that the commonality between the physical topology of domains and the structure of a binary tree is used for generate a network of group controllers, it emphasizes on how to update the group session keys after users joint or leave the multicast group. In contrast, claim 1 emphasizes on how to implement multi-layer multicasting management. Srivastava therefore fails to disclose any features of implementing multi-layer multicasting management.

Seventh, The Examiner asserts that the feature “finding a first interface layer control block according to data structure of an interface of net that has received a multicasting packet” is disclosed by Ciscon (par 0056).

Applicant submits that Ciscon fails to disclose the limitation of “finding a first interface layer control block according to data structure of an interface of net that has received a multicasting packet” in claim1. Ciscon appears to show connections among the network monitors, the network controllers, the resource database and the network element, and discloses a flow of a method for providing broadband communication over

a multi-layered network. Ciscon appears to mention that the method would be applicable to communication systems having a plurality of OSI reference model functioning.

In claim 1, when the multicasting proxy receives a multicasting packet, it finds a control block of an interface layer according to data structure of the interface of net since the data structure of the interface of net contains the information of the multicasting interface, and therefore, the control block for the interface can be determined. As stated above, Ciscon does not disclose interface layer control block and the feature of finding the control block according to data structure of the interface of net.

Eighth, The Examiner asserts that the feature “then judging multicasting characteristics of the multicasting groups which are defined in the found interface layer control block to determine whether to continue the successive processing; if so, performing the next steps, otherwise ending the processing” and “then judging multicasting characteristics corresponding to data links of the multicasting packet to determine whether to continue the successive processing; if so, performing the next step, otherwise ending the processing” are disclosed by Ciscon (par 0072-0073).

The Examiner has ignored the limitation of “judging multicasting characteristics of the multicasting groups” and “judging multicasting characteristics corresponding to data links to the multicasting packet” in claim 1 in the Office action. Applicant can find no mention of any features of “judging multicasting characteristics of the multicasting group” and “judging multicasting characteristics corresponding to data links to the multicasting packet” in the whole specification of Ciscon.

In addition, Applicant submits that Ciscon fails to disclose the limitation of “then judging multicasting characteristics of the multicasting groups which are defined in the found interface layer control block to determine whether to continue the successive processing; if so, performing the next steps, otherwise ending the processing” and “then judging multicasting characteristics corresponding to data links of the multicasting packet to determine whether to continue the successive processing; if so, performing the next step, otherwise ending the processing” in claim1. In claim 1, after the multicasting proxy receives a multicasting packet and finds a control block of an interface layer, it determines whether to continue the successive processing based on the multicasting characteristics of the multicasting group. Therefore, claim 1 relates to access rights management of multicasting service. Ciscon at best appears to show how the network monitor 308 monitors the QoS event and determines the layer N at which the event occurred, and how the net controller 304 responds to the QoS event, both of which have no relationship with the access rights management of multicasting service of claim 1.

Ninth, The Examiner asserts that the feature “finding a first data link layer control block according to a data relationship between data link layer control blocks and the first interface layer control block” is disclosed by Ciscon (par 0037-0040).

Ciscon fails to disclose any features of a first data link layer control block and data relationships between data link layer control blocks and the first interface layer control block in the whole specification of Ciscon.

In addition, Ciscon fails to disclose the limitation of “finding a first data link layer control block according to a data relationship between data link layer control blocks and

the first interface layer control block" in claim1. Ciscon appears to give an example of how to determine layers less than N. If layer 7 is considered layer N, the layers 3, 2 and 1 are layers less than N. If layer 3 is considered layer N, layers 2 and 1 are layers less than N. As such, all layers less than N is known as long as the layer N is determined, without any more processing of determination or judging. In contrast, because claim 1 relates to multi-layer multicasting management and there are relationship of the control blocks of the various layers, a control layer of a next layer should be determined specifically based on the relationship between the control block of the current layer and the control block of the next layer, which differs from Ciscon substantially.

Tenth, The Examiner asserts that the feature of "finding a first user layer control block according to a multicasting group IP and user attributes; then adding, deleting or modifying corresponding user information in the user layer control block" is disclosed by Ciscon (par 0039, par 0085).

Applicant submits that Ciscon fails to disclose any features of a first user layer control block, multicasting group IP and attributes in the whole specification. Further, Ciscon fails to disclose the features of adding, deleting or modifying user information in the user layer control block in the whole specification.

In addition, Ciscon fails to disclose the limitation of "finding a first user layer control block according to a multicasting group IP and user attributes; then adding, deleting or modifying corresponding user information in the user layer control block" in claim1. Ciscon at best appears to show that layer 3 may operate as a distributed IP layer and to give an example of how the network controller resolve a QoS event using MPLS. If a QoS event is occurring at a network element, the network controller may

use MPLS to route data traffic away from the problem causing network element. Ciscon appears to give an example of how the network controller resolve a QoS event using MPLS, which has no relationship with the multicasting management at user layer provided by the claim 1 of the present invention. Although Ciscon appears to show that layer 3 may be operated as a distributed IP layer, it at best shows a dynamic routing scheme, which differs from the multicasting managing at user layer of the claim substantially.

Applicant can find no mention of "multicasting characteristics", "multicasting group", "user layer control block", and "interface layer", etc in either Ciscon or Srivastava.

The Examiner states in the Office action that the motivation to combine the teaching of Ciscon and Srivastava for multi-layer user management system for multicasting server proxy would have been the proxy server is designed to provide extensible firewall and network security. Applicant respectfully submits that even if the references can be combined the combination can not lead to the claimed features of claim 1. This is because claim 1 is not directed to a proxy server designed to provide firewall and network security.

To sum up, the alleged combination of Ciscon and Srivastava do not teach or suggest each and every claim feature of claims 1. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection to claim 1. In the event that the Examiner maintains the rejection to claim 1 under 35 U.S.C. § 103(a), Applicant respectfully requests that the Examiner articulate his rationale sufficiently to support a *prima facie* case, specifically, where in Ciscon and Srivastava these claimed features

("multicasting characteristics", "multicasting group", "user layer control block", and "interface layer", etc) of claim 1 are taught.

In view of the foregoing, Applicant submits that claim 1 and its dependent claims 2-6 and 8-11 define over the art cited by the Examiner. Likewise, claim 12 defines over the art cited by the Examiner.

### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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